
FingerPrint[®] SS

*Enhanced Serial Graphic Printer Interface Card for the
Apple II+/IIe/IIIGS.*

Owners Manual

THIRDWARE COMPUTER PRODUCTS

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Class B Peripheral Device - Certification

This equipment generates and uses radio frequency energy and may cause interference to radio and television reception if not installed and used in strict accordance with the manufacturer's instructions. It has been certified, type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: (1) Reorient the receiving antenna, (2) Reorient the computer with respect to the receiver, (3) Move the computer away from the receiver, (4) Plug the computer into a different outlet so that the computer and receiver are on different branch circuits. If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: "How to Identify and Resolve Radio TV Interference Problems". This booklet is available from the US Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. It is the responsibility of the user to correct such interference.

The FingerPrint™ SS Serial Printer Interface

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Important Notice

Thirdware Computer Products, Inc. maintains a strong commitment to customer service and to full support of all its products. To qualify for our continued service it is necessary for the owner to complete the warranty registration immediately and mail it to Thirdware Computer Products, Inc. 3300 Corporate Avenue, # 116, Fort Lauderdale, FL 33331

Two Year No Hassle Warranty

If, within two years of purchase, your FingerPrint SS should prove defective in any way, Thirdware Computer Products will exchange it or repair it at no charge. In order to return a product please write or call for a Return Merchandise Authorization number (RMA). Upon obtaining the authorization to return the merchandise, please send the merchandise to Thirdware Computer Products together with a copy of your sales receipt, for a no hassle repair or exchange. However, please do not return the card without the RMA number.

Support Line

We are committed to providing all users of FingerPrint SS with the support and assistance they need to derive full benefit from our products. Should you need assistance of any kind call Customer Service at (305) 389-9009.

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1 The FingerPrint™ SS Serial Printer Interface

The Apple II is purposely made to accept expansion boards. The owner can add the serial or parallel printer interface that is appropriate for the kind of printer connected to the computer.

What It Is

The FingerPrint SS is a small circuit board that sends data from the Apple II to your printer. It plugs into an empty slot on the main circuit board, the motherboard, of your Apple II.

What It Does

The FingerPrint SS operates automatically through your software or if writing your own programs, through simple keystroke commands. It enables the programmer to print screen graphics, or text in full color or black & white. It will send commands to the printer to set page margins, line length, line feed, and page length, etc. If you are using commercially prepared software, these features are done by the software. The FingerPrint SS will let you dump the screen to the printer, rotate the screen-dump 90 degrees, double its size, etc.

The FingerPrint SS is compatible with the majority of brand name printers. The FingerPrint SS offers more flexibility with the computer and the printer than with any other printer interface.

2 Warranty

Important: Save the Sales Receipt. The FingerPrint SS comes with a two year no hassle warranty. If there is ever a problem with the FingerPrint SS Printer interface during the warranty period, write or call Thirdware for a Return Merchandise Authorization, (RMA), then return it to: Thirdware Computer Products, Inc. 3300 Corporate Avenue, # 116, Fort Lauderdale, FL 33331 along with the sales receipt for a no hassle repair or exchange.

3 How It Works

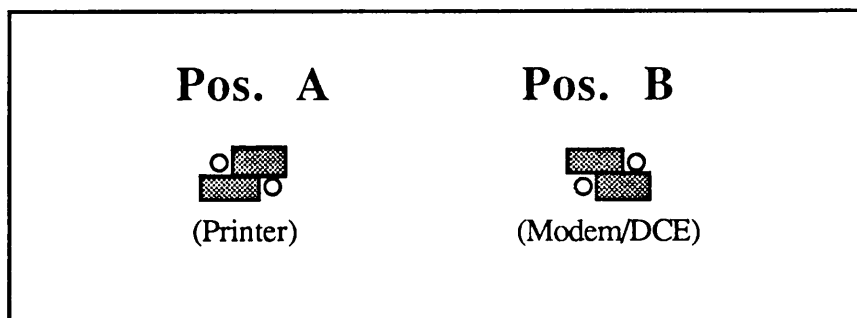
The FingerPrint SS works in either of two ways:

- 1) As a serial printer interface with the added feature of allowing the user to manipulate and control the printer settings from the keyboard of the computer.
- 2) As a serial communications interface for use with modems or other serial DCE (data communication equipment) devices.

Please note that there is no need to change the cable when switching from one to the other of the above applications.

In the upper left-hand corner of the card are a set of shunts which allow you to select the way in which your FingerPrint card will work. When set as seen in position "A", the FingerPrint card will be set for use with a printer. When set in position "B", the card is set to work with modems or other DCE type devices.

Please note that the Apple Personal Modem uses the setting shown in position "A".

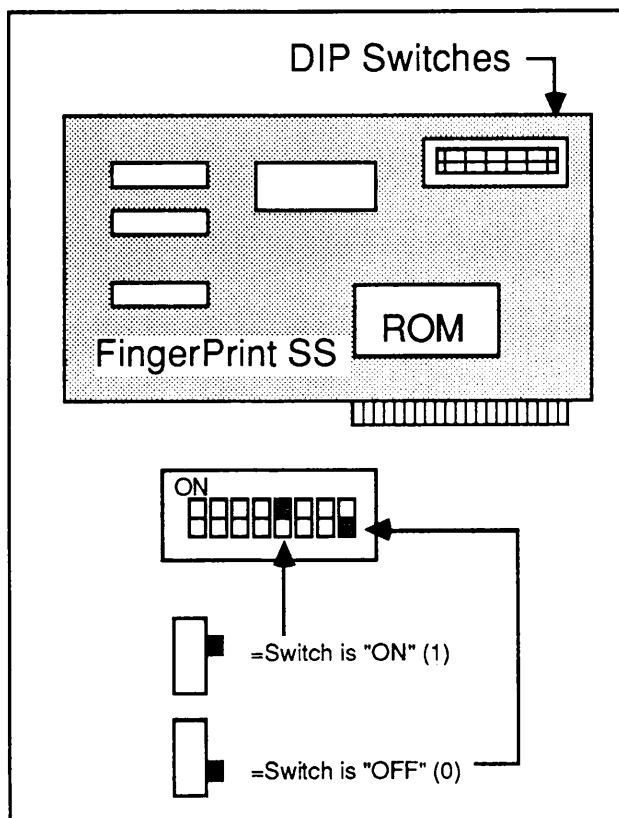


Make sure that you have the correct setting for your application or the FingerPrint SS card will not function correctly.

You should now go on to the next chapter and set the DIP switches that correspond to the printer that you will be using before installing the FingerPrint card in your computer.

4 The Dip Switch

Prior to installation, find the small group of 8 switches mounted on the card. This is called the Dip Switch. Locate your printer on the printer chart below, and set each switch handle on the dip switch to either on or off, according to the chart. The switch will show 1 or 0. 1 is on and 0 is off. If your printer is not listed, ask your dealer which of the below is compatible and use those settings.



Dip Switch Printer Settings

Printer	Switch					
	2	3	4	5	6	7
<i>Note: 8 is not used.</i>						
Apple DMP	1	1	1	1	1	1
Apple Imagewriter	1	1	1	1	1	1
Apple Imagewriter II	0	1	0	1	1	1
Apple Scribe	1	1	1	1	1	1
Apple Scribe (color)	1	0	0	0	0	1
Anadex	0	1	1	0	0	1
Cannon (color)	1	0	0	1	0	1
Citoh, NEC	1	1	1	1	0	1
Citoh 1570 (color)	0	1	0	1	0	1
Citoh 8510 (color)	0	1	0	0	0	1
Epson	1	1	1	0	1	1
Epson FX Fasttex-80	1	1	1	0	0	1
Epson JX (color)	1	1	0	1	1	1
Epson LQ-1500	1	1	0	1	0	1
Epson enhanced mode	1	1	0	1	0	1
Gemini, Smith Corona	1	1	1	0	1	1
Gemini (old version)	1	0	1	0	0	1
IBM (Epson compatible)	0	1	1	1	1	1
IDS (color)	1	0	0	0	1	1
IDS, Prisma	1	1	0	0	1	1
Mannesmann Tally	1	0	1	0	1	1
MT Spirit 80	1	1	1	0	1	1
Okidata 82,83,92,84	1	1	0	0	1	1
Okimate (color)	0	1	0	0	1	1
Panasonic, Legend, Brother	1	1	1	0	1	1
Quadjet (color)	1	0	0	1	1	1
Radio Shack (color)	1	1	0	0	0	1
Radio Shack D.M.P.	0	1	1	1	0	1
Toshiba	1	0	1	1	0	1

Switch Number One controls the interrupt request line, and it is normally on.

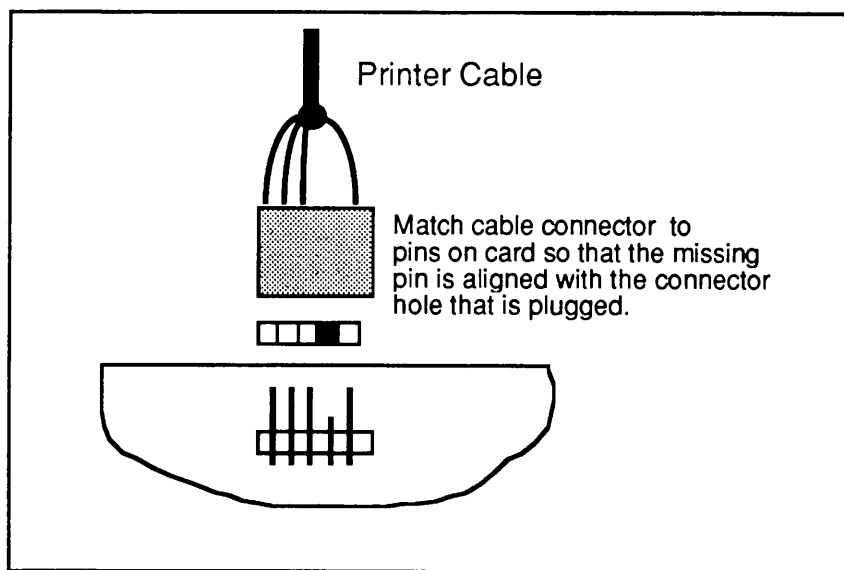
Switch Number Seven on the dip switch is used to control line feed after carriage return. Line Feed advances the paper one line. If switch One is set Off there will be no line feed sent to the printer after carriage return.

Switch Number Eight is not used.

5 Installation

Installation requires no tools or special knowledge.

1. First unplug your Apple II. Unplug and remove the monitor. Then place both hands at the rear of the Apple's top and lift up on the two tabs, separating the velcro fastener.
2. Slide the top towards the rear and lift the top off. As you look inside the computer, you will see a metal box to your left. It is the power supply.



┆	┆	┆	┆	┆
C	R	G	N.	T
T	X	N	C.	X
S		D		

-
-
3. Locate the empty slot marked number 1 next to the power supply. **Note:** If at all possible, Slot 1 should be used. Most programs will search for the printer interface in slot 1: however it will work in any other slot except 0. If you insert the FingerPrint SS in any other slot, remember which slot number it is. If you write your own programs, you will have to tell the computer the slot number when you use the FingerPrint SS.
 4. *To plug in the board:* Align the copper strips on the projected part of the board with the socket and push the card in with a gentle rocking motion. Be careful not to upset the dip switch settings. The board is designed so it will only go in one way.
 5. *To plug in the cable:* Guide the small end of the cable into the rear of the computer through the chassis opening nearest the FingerPrint SS and plug it into the board. It may be easier to insert the cable through the chassis opening and plug it into the board before plugging the board in. Then plug the other end into the printer. Refer to photograph number two for correct placement of the plug on the board.
 6. Replace the cover. Replace the monitor, plug them all in and you're ready.

Important: *If you do not plan on writing your own programs then there is nothing else you need to do. Close the computer and get started. The rest of the manual is for those who write their own programs.*

Quick Installation Summary

1. Set the Dip Switches on the board, according to the printer chart.
2. Remove the Apple's cover.
3. Insert the interface board in the slot nearest the power supply.
4. Pull the small connector on the cable into the computer through the nearest chassis opening and plug into the board.
5. Plug in the large cable connector into the Printer.
6. Replace the cover, replace the monitor.
7. Plug the Apple in. You're through.

Testing the Installation

Insert an Apple DOS disc into drive 1, and turn on the computer and the printer. When the prompt "]" appears on the screen, type PR# (NOTE: Type PR#1 if you have installed the card in slot #1. Type PR#2 if it is in Slot #2 etc.) This turns the interface card on. Press the return key. Each time you press return, the printer will print the prompt and feed one line. If not, double check the installation instructions or the summary and make sure everything is plugged in and turned on. If there is still trouble and your dealer cannot help, call the FingerPrint SS Help line (305) 389-9009

CP/M Test

If the Apple is used with a CP/M operating system, the interface card must be in slot 1. When the "A>" prompt appears on the screen, press Control, hold it down and press "P". Release both keys.

This executes the command that turns the FingerPrint SS card on, when in CP/M. The printer will not react visibly to this command but everything typed on the screen will be sent to the printer when you strike Return.

Repeating the same command will turn the FingerPrint SS card off when in CP/M.

6 Operation

FingerPrint SS is ready to use immediately after installation. When writing your own programs, commands are sent, in BASIC, by pressing Control, the capital letter "I", holding both down, releasing and pressing one of the keys listed below for the command. No space or hyphen between the I and the command is needed.

Operation Commands

Use these commands to set up your card. Depress the Control and the I, hold both, release and strike the command letters.

1. The commands show a hyphen between the control and the letter I. It should not be typed.
2. Where you see the small letter n, you must insert a number in its place. For example, if you want the line length to be 30 characters long, you would use Control-I 30 N.

7 Text Commands

To Print Text:

FOR:	PRESS:
Line Feed	Control-I A,
Cancel Line Feed	Control-I K
Left Margin	Control-I nL
Line Length	Control-I nN
Page Length	Control-I nP
Screen Dump (40 Col)	Control-I S,
Transparent mode	Control-I T
	or Control-I Z
Print Version	Control-I V
High Order Bit	Control-I H
Cancel High Order Bit	Control-I X
Changing Control Character	Control-I Control-Y
80 Column Text Screen Dump	Control-I 8S
Print Page 2	Control-I 2S
Set BAUD rate	Control-I nB
Data Format setting	Control-I nD

Note: Insert a number in place of the small letter n.

Text Command Explanations

FUNCTION:	PRESS:	BASIC:
Line Length	Control-I nN	PRINT CHR\$(9); "nN"
EXPLANATION: Sets line length. The "n" (n = number) designates the number of character spaces from the left edge of the page where the line will end. A carriage return will be sent after the last character. This command causes the monitor screen to be turned off and data sent only to the printer. If the line length is set for 0, the FingerPrint SS will not send a line feed until the Apple sends one.		

Left Margin	Control-I nL	PRINT CHR\$(9); "10nL"
EXPLANATION: Sets the left margin to nth column. All subsequent printing will have "n" spaces at the beginning of each line.		

Page Length	Control-I nP	PRINT CHR\$(9);“66”
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EXPLANATION: Sets the page length to the number of lines. The FingerPrint SS will send a form feed after the n number of lines specified has been printed. If a page length of 66 lines has been specified the printer will print 66 lines and send a form feed command. A Zero page length disables this function.

Add Line Feed	Control-I A	CHR\$(9);“A”
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EXPLANATION: This command adds a line feed to the carriage return. In BASIC a line feed after a carriage return will not be sent. This command automatically advances the paper after each carriage return. If the printer spaces two lines, check the dip switch on the printer that sends the line feed. When it is set and the Control I A is used, two lines feed are being received by the printer.

Cancel Line Feed	Control-I K	PRINT CHR\$(9);“K”
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EXPLANATION: Does not add a line feed to the carriage return. Cancels Control I A.

Screen Echo	Control-I I	PRINT CHR\$(9);“I”
--------------------	--------------------	---------------------------

EXPLANATION: This command allows you to send to the screen the data that is being sent to the printer.

Stop Screen Echo	Control-I nN	PRINT CHR\$(9); “80N”
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EXPLANATION: Turns off Screen Echo.

Screen Dump Page 1, 40 column	Control-I S	PRINT CHR\$(9);“S”
--	--------------------	---------------------------

EXPLANATION: Sends the 40 column screen to the printer.

Screen Dump Page 2, 40 column	Control I 2S	PRINT CHR\$(9);“2S”
--	---------------------	----------------------------

EXPLANATION: Sends Text Page 2 to the Printer.

Send High Order Bit	Control I H	PRINT CHR\$(9);“H”
----------------------------	--------------------	---------------------------

EXPLANATION: The Apple sends a string of either 7 or 8 bits to the printer. It doesn't matter which you use as long as they both agree. This command sends the High Order (8th bit) to the printer to permit special characters or block graphics to be printed.

Cancel High Order Bit	Control I X	PRINT CHR\$(9);“X”
------------------------------	--------------------	---------------------------

EXPLANATION: Does not send the 8th bit, high order bit, puts the printer back into normal text mode and overrides the Control I H command.

Change Control	Control I Control Y	PRINT CHR\$(9);CHR\$(25);
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EXPLANATION: Changes the Control character from Control I to Control Y. Use Control Y when entering commands in CP/M or PASCAL.

Screen Dump	Control I 8S	PRINT CHR\$(9);“T”
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Page 1, 80 Col.

EXPLANATION: Sends the 80 col screen to the Printer. Supports Videx Super Term and Videx Ultra Term.

Make Transparent	Control I T or I Z	PRINT CHR\$(9);“8S”
-------------------------	---------------------------	----------------------------

EXPLANATION: With this control the FingerPrint SS becomes transparent.

Prints Version	Control I V	PRINT CHR\$(9);“V”
-----------------------	--------------------	---------------------------

Firmware

EXPLANATION: This command prints out the version number of the FingerPrint SS firmware.

Overrride 9600	Control I nB	PRINT CHR\$(9);“nB”
-----------------------	---------------------	----------------------------

Baud Rate

EXPLANATION: This command lets you change the standard (default) setting of 9600. Insert the number you want in place of the small n.

Data Format	Control I nD	PRINT CHR\$(9);“nD”
--------------------	---------------------	----------------------------

EXPLANATION: With this command you override the default settings of the dip switch. Use the table below to determine what number goes in place of the small n.

n	Data Bits	Stop Bits
0	8	1
1	7	1
2	6	1
3	5	1
4	8	2 with nP options 4 thru 7
5	7	2
6	6	2
7	5	2 1½ with nP options 0 thru 3

BAUD Rates

The FingerPrint SS can send and receive a wide variety of bits per second. But the computer, the printer and the modem must all be aware of the speed the user has chosen, and each be set for it.

1. 50 baud	9. 1800 baud
2. 75 baud	10. 2400 baud
3. 110 baud	11. 3600 baud
4. 135 baud	12. 4800 baud
5. 150 baud	13. 7200 baud
6. 300 baud	14. 9600 baud
7. 600 baud	15. 19200 baud
8. 1200 baud	

To set the BAUD rate use the following command:

Control InD

The lower case n is where you insert the number of BAUD rate. Select the number from 0 to 15, in the table above, and insert it in place of the n. The normal setting, called a Default setting, is 9600 baud.

Formatting a Printed Page

When a printed page is formatted it is given boundaries. How long, how wide etc. Most word processing programs enable the user to set the boundaries of the page and thus format it.

If you are not using a word processor you may use FingerPrint SS text commands to set up your page.

Note: In the commands below, where a small n is indicated, insert the number you determine in place of that small n. For example, if you want the line length to be 80 and the command for line length is Control I nN, you would type the command: Control I 80N. (replacing n with the 80).

Print Statement Commands

The print statement is an alternative way of sending printer commands. The command you want is placed within the program to print what the user wants whenever the program is run.

In writing print statement commands the FingerPrint SS must first be turned on or off by using the commands:

To turn it On type: PR#1 (for Slot #1)

To turn it Off type: PR#0

If FingerPrint SS is installed in a slot other than #1, turning it on requires the use of PR# and the number of the slot it is in. Remember, the FingerPrint SS will not operate in slot Zero.

For Apple 40 column Test type the following Screen Dump program:

```
10 PR#1
20 PRINT CHR$(9); "S"
30 PR#0
RUN
```

For Apple II 80 column Test type the following Screen Dump program:

```
10 PR#1
20 PRINT CHR$(9); "8S"
30 PR#0
RUN
```

The contents of your screen should be dumped to the printer. If not check to see that everything is plugged in and switched to on. If you still have problems call our Help Line (305) 389-9009. **Note:** This command also works with Videx Super Term and Videx Ultra Term.

8 Text Screen Dump Commands

The text screen dump sends what ever text data is on the screen to the printer. Find your computer on the following table and use the command indicated for Text Screen Dump:

Computer	Display	Command
Apple IIe/II +	40 column Applesoft	Control-IS
Apple IIe/II +	40 column CP/M	Control-YS
Apple IIe	80 column Applesoft	Control-I 8S
Apple IIe	80 column CP/M	Control-Y 8S
Apple II +	80 column	Control-I 8S
Apple II GS	40 column Applesoft	Control-I S
Apple II GS	40 column CP/M	Control-YS
Apple II GS	80 column Applesoft	Control-I 8S
Apple II GS	80 column CP/M	Control-Y 8S

For a Quick Screen Dump:

- Insert a system disc into drive 1, close the door and switch the computer to on.
- Turn the printer on and make certain it is on-line.
- After the monitor screen has the text you want to dump to the printer, type one of the commands listed above.
- The printer should be printing the screen.

9 Graphics Commands

TO GET:

Color Screen Dump	Control-I	GC
Screen Dump Low Res Page 1	Control-I	G/
Screen Dump Low Res Page 2	Control-I	G/2
Screen Dump Hi Res Page 1	Control-I	G
Screen Dump Hi Res Page 2	Control-I	G2
Screen Dump Pages 1 & 2	Control-I	GS
Screen Dump Double Hi-Res	Control-I	Ge
Double Size Screen Dump	Control-I	GD
Inverse	Control-I	GI
Rotate screen 90°	Control-I	GR
Text Window	Control-I	GM

PRESS:

Graphics Command Explanations

FUNCTION:**PRESS:****BASIC:**

Screen Dump Page 1	Control-I G	PRINT CHR\$(9);“G”
---------------------------	--------------------	---------------------------

Prints Hi-Res screen page. Every white dot on the screen will be a black dot on the paper. To reverse this use the Inverse command.

Screen Dump Page 2	Control-I G2	PRINT CHR\$(9);“G2”
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Prints Hi-Res page 2.

Screen Dump Pages 1 & 2	Control-I GS	PRINT CHR\$(9);“GS”
------------------------------------	---------------------	----------------------------

Prints Hi-Res Pages 1 and 2, side by side.

Double Hi-Res	Control-I Ge	PRINT CHR\$(9);“Ge”
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Screen Dump

For use with Apple IIe models Rev B or later. Requires 80 column card.

Double Size	Control-I GD	PRINT CHR\$(9);“GD”
--------------------	---------------------	----------------------------

Prints the graphic screen double the normal size. Actually it is four times normal size, printing four dots on paper for every dot on the screen.

Inverse	Control-I GI	PRINT CHR\$(9);“GI”
----------------	---------------------	----------------------------

Makes a positive image into a negative. Prints every white dot on the screen as a white dot and every black dot on the screen becomes a black dot.

Rotate	Control-I GR	PRINT CHR\$(9);“GR”
---------------	---------------------	----------------------------

Rotates the graphics on the screen 90° clockwise. Text cannot be rotated.

Text Window	Control-I GM	PRINT CHR\$(9);“GM”
--------------------	---------------------	----------------------------

Prints text within the graphics, in a window four lines high, at the left edge of the paper.

Lo-Res Page 1 screen Dump	Control-I GI	PRINT CHR\$(9);“GI”
----------------------------------	---------------------	----------------------------

Dumps Page 1 in Lo-Res to the printer.

Lo-Res Page 2 screen Dump	Control-I GI/2	PRINT CHR\$(9);“GI/2”
----------------------------------	-----------------------	------------------------------

Dumps Page 2 in Lo-Res to the printer.

Color Screen Dump	Control-I G C	PRINT CHR\$(9);“GC”
--------------------------	----------------------	----------------------------

Dumps the Screen in Color.

FingerPrint SS lets you print double sized, rotate the screen 90 degrees, and print the inverse of the screen display. Inverse means everything that is dark on the screen will be dark on the paper and vice versa. You can dump graphics to the printer, and print a picture that has been saved on disc. You can print Lo-Res or Double Hi-Res, Page One or Two, or print them side by side.

To do a graphics screen dump in Applesoft BASIC press:

Control-I G

All graphic commands begin with, and contain the Control-I G command. By typing a letter command after Control-I G, many variations are possible. Commands can even be strung together, typing several commands after the Cntrl-I G.

To print a graphics screen Double-Size, press:

Control-I G D

To print a graphics screen Rotated 90°, press:

Control-I G R

To print a graphics screen Double-size and Rotated 90° press:

Control-I G D R

To print a graphics screen Double-size, Rotated 90°, Inverse and Hi-Res Page 2, press:

Control-I G D I R 2

To print a graphics screen in color use the command C.

Control-I G C

Explanation of Hi-Res Page 1 & Page 2

The term resolution refers to the density of the dots and the size of the dots on the screen, the greater the number of dots the higher the resolution. In Lo-Res, the dots are fewer and bigger in size. In Double Hi-Res they are smaller and packed more closely together. There are locations in memory set aside for Hi-Res called Page 1 and Page 2.

To print a picture the computer must be told which page to print. A picture may be loaded into either page 1 or page 2. The FingerPrint SS is set up to automatically print Page 1. If you want to print page 2 you must tell it. If not, it will print page 1.

The memory location for page 1 is A\$2000

The memory location for page 2 is A\$4000

10 Graphics

Screen Dump Commands

While running a program if you want to print a graphics picture do this:

1. Press control and reset at the same time. A copy protected program will not allow the interruption or allow the screen data to be printed. (Thirdware makes a product for the Apple II called FingerPrint+ that has a wafer switch that adheres to the computer, it lets you immediately dump the screen to printer without interrupting the program.
2. Turn on the FingerPrint SS by pressing PR#1 and press RETURN.
3. Press Control-I G and press return. If you wish to print page 2 remember to press Control-I G2 and press return.

To Print a Picture Saved to Disc

Assuming the FingerPrint SS is on and the prompt ‘]’ is on the screen, put the disc containing the picture you wish to print in Drive A. If the name of the picture is GRAPH type:

HGR	and press RETURN
BLOAD GRAPH, A\$2000	and press RETURN

The picture should be loaded to the screen. Remember to insert the name of your picture where we have used GRAPH. Then use Control I-G to dump the screen to the printer. After the picture is printed type TEXT and RETURN to get back to the text mode. If you want to print Page 2, you would substitute HGR2 and A\$4000 and use Control-I G2 to print the picture.

While writing a program if you want to load a file:

For Page 1, type:	PRINT CHR\$(4);“BLOAD {File’s name},A\$2000”
For Page 2, type:	PRINT CHR\$(4);“BLOAD {File’s name},A\$4000”

To Print Hi-Res Pages Side-By-Side

With the FingerPrint SS turned on, and both files loaded into pages one and two, use the command Control-I GS to print both pages.

In Applesoft, type the following program to print side by side. Remember to press RETURN after each line.

```
10 PRINT CHR$(4);"BLOAD GRAPH 1,A$2000"  
20 PRINT CHR$(4);"BLOAD GRAPH 2,A$4000"  
30 PR#1  
40 PRINT CHR$(9);"GS"  
50 PR#0:END  
RUN
```

11 Applesoft Formatting

We have included a program to demonstrate text formatting in Applesoft. It will set up both right and left margins, line length and page length.

Type this	Explanation
10 I\$ = CHR\$(9)	---
20 PR#1	Turns FingerPrint SS on
30 PRINT I\$;"80N"	Sets line length
40 PRINT I\$;"60P"	Sets page length
50 PRINT I\$;"10L"	Sets left margin
60 FOR I = 1 TO 100	---
70 PRINT "EVERY GOOD BOY DOES FINE."	Type two spaces between . and "
80 NEXT I	---
90 PR#0	Turns FingerPrint SS off
100 END	

Turn your printer on, put it "on-line" and type RUN then press RETURN.

12 Default Settings

The FingerPrint SS has been designed to operate with preset values. These values are already “programmed” in FingerPrint SS. They are the most commonly used values. They determine the length of a line, the width of a page etc. These preset values are called Default Settings. The FingerPrint SS is made with pre-determined print values. So if you do not assign different values the pre-determined values we call Default Settings will be assumed by FingerPrint SS.

Default Settings

Left Margin:	0
Line Length:	0
Page Length:	0
Screen Display:	On (in Applesoft, BASIC)
Screen Display:	Off (with PASCAL and CP/M)
Line feed (after carriage return):	Yes or No depending on Dip Switch setting. No with PASCAL and CP/M
Eighth bit	Off

Custom Drivers

For writing your own drivers here are the locations used to access the card.
Y = No where N = Slot#

Address	Read	Write
\$C080, Y	Dip Switch	
\$C088, Y	Input Buffer	Output Buffer
\$C089, Y	Status Register	Status Register
\$C08A, Y	Command Register	Command Register
\$C08B, Y	Control Register	Control Register

Note: When you write into \$C080,Y a strobe signal to the printer is automatically generated.

For more information see the technical specifications for the 6551 chip.

Assembler Driver Sample

This list gives an example of how to output a character using these locations:

	PHA	;SAVE OUTPUT CHARACTER ON STACK
	LDY #\$10	;SET UP Y-REGISTER FOR SLOT 1
BUSY	LDA \$C089,Y	CHECK STATUS FOR BUSY,
	AND #\$70	;CHECK BIT 4, 5 AND 6
	CMP #\$10	
	BNE BUSY	;IF SET THEN BUSY, RECHECK
OUTPUT	PLA	;RESTORE OUTPUT CHARACTER
	STA \$C080,Y	;STORE TO OUTPUT LATCH
	RTS	;RETURN FROM SUBROUTINE

If further programming support is needed, put your questions including your day time phone number, in the mail to TCP.
3300 Corporate Avenue, # 116, Fort Lauderdale, FL 33331

13 Data Communications

Your FingerPrint SS will operate in conjunction with a Modem and the proper cable. Some Apple Modems do not require a special cable. However, contact your dealer for information on the correct cable to use, or call our Help Line 389-9009.

When using a communications package and the FingerPrint SS there is no need to reconfigure your FingerPrint SS. The software will do it for you automatically.

When installing the communications software, remember to select the Super Serial option as your communications interface.

If you have not yet purchased a communications package for your Apple, we highly recommend the ASCII Express by United Software of Los Angeles, CA.

If You Need Help

Thirdware Computer Products is committed to providing all users of FingerPrint SS with the support and assistance they need to derive full benefit from our products. Should you need assistance of any kind call (305) 389-9009.



Unleash the full power of your Apple computer and take full control of your printer and software. Become more productive and more creative by using FingerPrint® enhancement products from Thirdware Computer Products, the personal computer enhancers. Makers of high quality computer enhancement products since 1983.

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ACCESSORIES ORDER FORM

Use this form when you wish to order accessories or replacement parts for your FingerPrint® card. To order, just provide the quantity of each respective product and fill in the total at the bottom of the form. If you wish to pay by credit card, please be sure to provide the information regarding account number, date of expiration and name of card holder. If you are paying personal check, please make out the check to: "Thirdware Computer Products".

It is very important that you also check to make sure that you have filled out your address correctly and provided us with a day time telephone number where you can be reached if any questions arise.

Method of payment: ☐ Check enclosed \$ _____ ☐ Credit Card

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

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FINGERPRINT® ORDER FORM

Quantity	Description	Price	Total
_____	FingerPrint parallel cable	\$28.00	_____
_____	FingerPrint ImageWriter II cable	\$28.00	_____
_____	FingerPrint serial cable	\$28.00	_____
_____	FingerPrint communications cable	\$28.00	_____
_____	FingerPrint _____ * upgrade	\$35.00	_____
_____	FingerPrint activator button	\$9.00	_____
_____	FingerPrint _____ * manual	\$8.00	_____
_____	FingerPrint _____ * Slide-Show	\$15.00	_____
	Sub TOTAL.....	\$	_____
	Shipping & Handling add \$3.50	\$	3.50
	Florida residents add 6% sales tax	\$	_____
	TOTAL	\$	_____

* Indicate which FingerPrint card you own: Plus, GSI, SS or G+

FINGERPRINT® WARRANTY CARD

Name: _____

School/Organization: _____

Address: _____

City: _____ State: _____ Zip: _____

Title: _____ Sch/Off Phone: _____

Product: ☐ FingerPrint GSi ☐ FingerPrint Plus ☐ FingerPrint IIc
☐ FingerPrint SS ☐ FingerPrint G+ ☐ Other: _____

Date of Purchase: _____

Purchased From: _____

What computer magazines do you read regularly?:

☐ A+ ☐ InCider ☐ Nibble ☐ Compute ☐ Personal Computing
☐ Electronic Learning ☐ Classroom Computer Learning ☐ THE Journal

How did you learn about FingerPrint?: ☐ Magazine ☐ Dealer ☐ Friend

We welcome your comments: _____

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